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NABALUS ASPERA (ASTERACEAE) IN LOUISIANA

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ABSTRACT

The occurrence of *Nabalus (Prenanthes) asper* (Asteraceae) is documented in Louisiana. It was collected by Josiah Hale sometime before 1843, probably in Rapides Parish in some isolated prairie that no longer exists.

KEY WORDS: Asteraceae, Compositae, *Nabalus*, *Prenanthes*, Louisiana, Josiah Hale, isolated prairies

In the course of studying the vascular flora of Texas, we occasionally discover information concerning the flora of adjoining states. In this instance, a historic collection of *Nabalus asper* (Michx.) Torrey & A. Gray from Louisiana permits documentation of the species in that state, something, until now, never done. This particular study originated with our discovery, study, and report of the species in Texas, under the name *Prenanthes aspera* Michx. (Singhurst & Holmes 2010).

Following is a short history, with commentary, of *Nabalus asper* in Louisiana.

The initial report of the species in Louisiana was by Torrey and Gray (1843), who proposed the new combination *Nabalus asper*, based upon Michaux's *Prenanthes aspera* (spelling of the epithet varies by gender). In this work, Torrey and Gray used the exclamation point (!) "after the manner in which it is employed by De Candolle and other modern botanists, to indicate that we have seen an authentic specimen of the author, or from the location cited." Thus the distribution was given as this: "Dry barrens and prairies of Ohio! Indiana! Louisiana! and upper Missouri!" No other data was presented.

Riddell, in Catalogus florae Ludovicianae (1852), published a list of the vascular flora of Louisiana, the Cyperaceae and Gramineae not included. *Nabalus asper* is included on page 754, but without further comment. The list is based on the results of a great many years of observation by Dr. Josiah Hale, by the late Prof. W.M. Carpenter, and by J.L. Riddell. The work was abridged from a manuscript work, "Plants of Louisiana," submitted to and rejected for publication by the Smithsonian Institution. Reportedly, nearly all of the species are represented by specimens in the author's herbarium [see entry 94 in Ewan (1967) for a brief description of the Riddell Herbarium].

Gray included *Nabalus asper* in the Synoptical Flora of North America (1884). Louisiana is mentioned there only as part of the distribution. Various other authors — Small (1933), Fernald

(1950), and Steyermark (1963) — have included Louisiana within the distribution of the species, under either *Nabalus* or *Prenanthes*.

Cronquist (1980) included Louisiana in the distribution of the species, but without further comment. This reference is most often cited by Louisiana authors as the basis for including the species as part of the flora of the state. MacRoberts (1984) referenced Riddell (1852) for including *Nabalus asper* in his checklist. MacRoberts (1988) and Thomas and Allen (1996) both cited Cronquist as the source for inclusion of *N. asper* in their checklists of the Louisiana flora. Gandhi and Thomas, in Asteraceae of Louisiana (1989), included the species in their treatment, based upon Cronquist (1980) and commented "but we located no LA specimens."

Finally, Bolger (2006) cited Louisiana within the distribution of the species, without additional comment.

In summary, the species has been cited many times as occurring in Louisiana but has never been documented by reference to a collection. Only one citation (Torrey and Gray 1843) has claimed to be supported by an actual specimen, but it did not include any additional information.

An inquiry to the Gray Herbarium resulted in location of a specimen of *Nabalus asper* from Louisiana. The specimen was made available for study through an e-loan (high definition digital photograph) and is reproduced here with permission (Fig. 1).

Two different collections are mounted on the sheet. David E. Boufford, Senior Research Scientist at GH, quoted in Singhurst et al. (1998) commented "it was his [Gray's] practice, to save paper I suppose, to mount two or more plants [i.e., different collections] on a sheet." The two specimens can be distinguished by the age/condition of the plant at time of collection and the differences in the stem cuts. The three stems on the left side of the sheet make up a specimen of *Nabalus asper* collected in Kentucky. These were collected by C.W. Short (or possibly were only part of his herbarium) and are not part of this study. The three stems on the right are also *N. asper*, as is written on the label. The location is given as "Louisiana." (in type) followed by the name of the collector, "Hale" (in script) [quotes added]. The collector is Josiah Hale, a student of Rafinesque, physician, and botanist (Ewan 1977). There is no further location or date. Ewan mentioned that problems persist in fixing collecting localities of Hale's specimens. It is, however, possible to determine an approximate time and place of collection.

The following brief account of Hale's life is extracted from Ewan (1977). In 1825, Hale settled on the Red River in Rapides Parish, 20 miles south of Alexandria. In 1828, he moved to Alexandria, where in 1830 he reported on the yellow fever epidemic in Alexandria in the Transylvania Journal of Medicine. He retired from medical practice in 1834 to devote full time to botany and the pursuit of natural history. In 1838, Torrey and Gray acknowledged "Dr. Hale of Alexandria" with citations that were followed by the exclamation mark (!), meaning they had seen his collections. In 1849, because of financial crisis, Hale returned to practicing medicine. In 1850, he moved to New Orleans.

Apparently a large portion, or possibly most, of Hale's collections from Louisiana were made during his tenure in Alexandria and Rapides Parish. His collection of *Nabalus asper* was cited by Torrey and Gray (1843), thus was collected prior to that date. The collection year could be from 1825 to 1842 but would seem more likely to be after 1834, when he supposedly devoted full time to botany. The most likely location would be in or near Alexandria, Rapides Parish, but almost certainly in central Louisiana.

Figure 1. *Nabalus aspera* (*Hale s.n.*, GH), the three stems on the right. The three stems on the left are *Nabalus aspera* from Kentucky (*Short s.n.*, GH). This image belongs to the Digital Collection of the Harvard University Herbaria <http://www.huh.harvard.edu/collections/digital_coll.html>

There has been skepticism, at least among the authors, as to the occurrence and collection of *Nabalus asper* in Louisiana, which just does not seem to be a favorable location. The species has a distribution that closely matches the tall grass prairie (Bolger 2006), resulting in it being considered as a tall grass prairie species. However, there are in Louisiana about 16,000 ha of isolated prairies (MacRoberts et al. 2003), mostly in the northern half of the state (Rapides Parish and northward). Generally, these isolated prairies are less than 5 ha and are most similar to "true prairie" and "central Texas" types. Several such prairies occurred in Rapides Parish and would appear to be a likely place of occurrence for the *Nabalus* species. MacRoberts et al. (2003) mentioned that 99% of the isolated prairies have been destroyed, which would suggest that *N. asper* has been extirpated from the state, should it have occurred in this type of area. The Louisiana record is best considered to be historical.

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